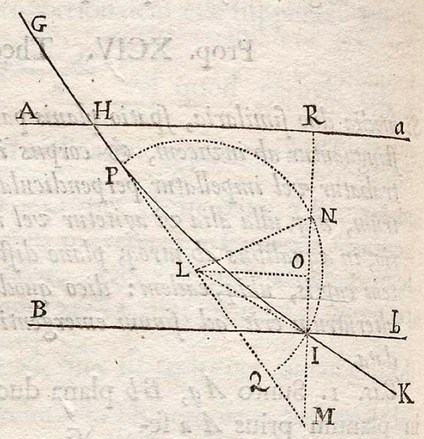
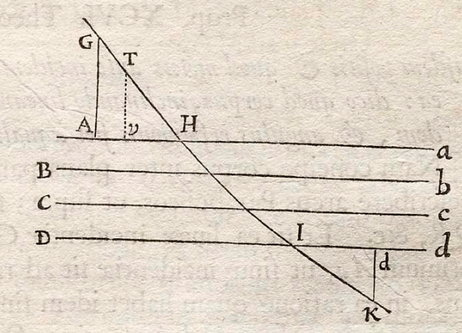
vallo *LI* deſcribatur circulus, ſecans tam *HM* in *P* & *Q*, quam *MI* productam in *N*; & primo ſi attractio vel impulſus ponatur uniformis, erit (ex demonſtatis *Galilæi*) curva *HI* Parabola, cujus hæc eſt proprietas, ut rectangulum ſub dato latere recto & linea *IM* æquale ſit *HM* quadrato; ſed & linea *HM* biſecabitur in *L*. Unde ſi ad *MI* demittatur perpendiculum *LO*, æquales erunt *MO*, *OR*; & additis æqualibus *IO*, *ON*, fient totæ æquales *MN*, *IR*. Proinde cum *IR* detur, datur etiam *MN*, eſtq; rectangulum *NMI* ad rectangulum ſub latere recto & *IM*, hoc eſt, ad *HMq.*, in data ratione. Sed rectangulum *NMI* æquale eſt rectangulo *PMQ*, id eſt, differentiæ quadratorum *MLq.* & *PLq.* ſeu *LIq.*; & *HMq.* datam rationem habet ad ſui ipſius quartam partem *LMq.*: ergo datur ratio *MLq.* – *LIq.* ad *MLq.*, & diviſim, ratio *LIq.* ad *MLq.*, & ratio dimidiata *LI* ad *ML*. Sed in omni triangulo *LMI*, ſinus angulorum ſunt proportionales lateribus oppoſitis. Ergo datur ratio ſinus anguli incidentiæ *LMR* ad ſinum anguli emergentiæ *LIR*. Q. E. D.



Cas. 2. Tranſeat jam corpus ſucceſſive per ſpatia plura parallelis planis terminata, *AabB*, *BbcC* &c. & agitetur vi quæ ſit in ſingulis ſeparatim uniformis, at in diverſis diverſa; & per jam demonſtrata, ſinus incidentiæ in planum primum *Aa* erit ad ſinum emergentiæ ex plano ſecundo *Bb*, in data ratione; & hic ſinus, qui eſt ſinus incidentiæ in planum ſecundum *Bb*, erit ad ſinum

num emergentiæ ex plano tertio *Cc*, in data ratione; & hic ſinus ad ſinum emergentiæ ex plano quarto *Dd*, in data ratione; & ſic in infinitum: & ex æquo ſinus incidentiæ in planum primum ad ſinum emergentiæ ex plano ultimo in data ratione. Minuatur jam planorum intervalla & augeatur numerus in infinitum, eo ut attractionis vel impulſus actio ſecundum legem quamcunq; aſſignatam continua reddatur; & ratio ſinus incidentiæ in planum primum ad ſinum emergentiæ ex plano ultimo, ſemper data exiſtens, etiamnum dabitur. Q. E. D.



Prop. XCV. Theor. XLIX.

Iiſdem poſitis; dico quod velocitas corporis ante incidentiam eſt ad ejus velocitatem poſt emergentiam, ut ſinus emergentiæ ad ſinum incidentiæ.

Capiantur *AH*, *Id* æquales, & erigantur perpendicula *AG*, *dK* occurrentia lineis incidentiæ & emergentiæ *GH*, *IK*, in *G* & *K*. In *GH* capiatur *TH* æqualis *IK*, & ad planum *Aa* demittatur normaliter *Tv*. Et per Legum Corol. 2. diſtinguatur motus corporis in duos, unum planis *Aa*, *Bb*, *Cc* &c. perpendicularem, alterum iiſdem parallelum. Vis attractionis vel impulſus agendo ſecundum lineas perpendiculares nil mutat motum ſecundum parallelas, & propterea corpus hoc motu conficiet æqualibus temporibus æqualia illa ſecundum parallelas intervalla, quæ ſunt inter lineam *AG* & punctum *H*, interq; punctum *I* & lineam *dK*; hoc eſt, æqualibus temporibus deſcribet lineas *GH*, *IK*.

SIR ISAAC NEWTON *Philosophiae Naturalis Principia Mathematica* LONDON, 1687 THE WARNOCK LIBRARY Octavo